

REMARKS

The foregoing amendments are submitted under 37 CFR 1.116 in response to the Final Office action finally rejecting claim 1 under 35 U.S.C. 112, second paragraph, claims 1-4 and 6 under 35 U.S.C. 102(e), claims 1-3 under 35 U.S.C. 102(b), and claims 5 and 7 under 35 U.S.C. 103(a). Also, the amendment of the specification on page 6 is proposed in order to overcome the objection thereto as stated on page 2 of the Final Office action.

In regard to the final rejection of claim 1 under 35 U.S.C. 112, second paragraph, as being incomplete, the proposed amendments to claim 1 clarify the alleged omission of structural cooperative relationships between the membrane type of processing elements as questioned on page 3 of the Final Office action. Thus, claim 1 as amended specifies: "spacer means maintaining the--membrane elements in laterally spaced relation--throughout within the sealed chamber through which the contaminated-laden fluid is conducted for filtration by the processing membrane elements from which the filtered fluid is laterally withdrawn--as a cleansed portion--". Entry of such proposed amendments to claim 1 so as to avoid its rejection as incomplete is therefore expected.

Claim 1 as amended furthermore emphasizes the basic distinction of the present invention as claimed over the disclosure in the Funatsu et al. patent of record relied on for the final rejection under 35 U.S.C. 102(e). According to the disclosure in the Funatsu et al. patent, the part (6) incorrectly described as a "drain for discharge of clean fluid (6 fig. 1)" on page 4 of the Final Office action, is actually an inlet through which cells 10 are fed into the module for processing by a culture medium emerging laterally from hollow fibers 2. Thus, the Funatsu et al. patent disclosure is directed to a processing arrangement different from that of the present invention as

claimed, by reason of which claim 1 together with claims 2, 3, 4 and 6 dependent therefrom are clearly not anticipated by the Funatsu et al. patent.

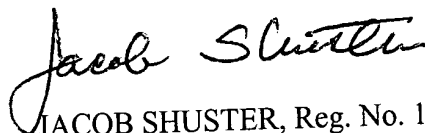
In regard to the final rejection of claims 1-3 over the Garcera et al. patent of record under 35 U.S.C. 102(b), more careful attention to the actual disclosure in such prior art reference is in order since there is no lateral withdrawal of filtered fluid from the processing elements 1 during confined axial flow of fluid along such elements 1 within the tube 11 as disclosed in the Garcera et al. patent. Thus, claim 1 together with claims 2 and 3 dependent therefore clearly distinguish over the disclosure in the Garcera et al. patent in a patentable sense.

The Okumura patent of record is relied on as a secondary prior art reference in combination with either the Funatsu et al. or Garcera et al. patent as the primary prior art reference for final rejections of claims 4, 5, 6 and 7 under 35 U.S.C. 103(a). Such Okumura patent however fails to overcome and is not even referred to in regard to the aforementioned inadequacies of the Funatsu et al. and Garcera et al. patents.

Claim 8 was withdrawn from consideration because it is directed to a method as compared to a structural arrangement as called for in claims 1-7. New claim 9 corresponds to claim 8 but is directed to a structural arrangement basically similar to claim 8 in so far as claim limitations are concerned. Thus new claim 9 as in the case of amended claim 1, patentably distinguishes over the prior art of record by specifying: "means positioning the membrane elements--for conducting the contaminate-laden fluid--to initiate axial flow--so as to thereby undergo said filtration into the cleansed portion; and drain means for withdrawing the cleansed portion after lateral passage through the membrane elements to effect said filtration without mixing--". The allowance of claim 9 is therefore also in order.

In view of the foregoing, entry of the proposed amendments and an allowance of the application based on claims 1-7 and 9 is requested.

Respectfully submitted,



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MARKED-UP VERSION OF AMENDMENTS
TO THE SPECIFICATION

Please amend the paragraph numbered [0015] bridging pages 5 and 6, from line 17 on page 5 through line 8 on page 6, as follows:

[0015] As shown in FIG. 5, a plurality of the elements 20 to be bundled in close parallel spaced relation to each other are disposed in their desired relative positions within a body of uncured epoxy resin from which one of the holding discs 24 is separately formed within one of the seal rings 22 before assembly within a module 10. The epoxy resin in the uncured fluent state will fill all spaces between the axial end portions of the elements 20 to be bounded within the inner diameter of the annular seal ring 22. Positioning of the filter elements 20 during the latter described stage of the fabrication procedure, before molding of said one of the holding discs 24, is established by clamping between fixedly spaced rigid plates 30 and 32 on which resilient material layers 34 and 36 are respectively disposed. To facilitate molding, a thin mold release film 38 is placed on the resilient layer 34 underlying the lower ends of the elements 20 within the uncured body of epoxy resin retained within the seal ring 22 [24] under pressure as denoted by arrow 40 and a clamping pressure on the plate 32 as denoted by arrow 42. The thickness of the holding discs 24 is determined by the height of the seal ring 22. When one of such discs 24 is so formed upon full curing of the epoxy resin after 24 hours for example, the element bundle as shown in FIG. 5 is then rotated 180° and the same fabrication procedure is repeated to form another holding disc 24 at the other ends of the elements 20, not shown in FIG. 5, to complete bundling of the elements before transfer to the module 10 for assembly therein.

MARKUP-VERSION OF AMENDMENTS
TO THE CLAIMS

Rewrite claim 1 as follows:

1. (Twice Amended) In combination with a housing of a module enclosing a plurality of elongated filter processing membrane elements through which a contaminate-laden fluid is filtered; the improvement residing in: sealing means for establishing a sealed chamber within the module housing through which the contaminate-laden fluid is conducted externally of and along the filter processing membrane elements; holding means for positioning the elongated processing membrane elements within the sealed chamber in a bundled condition; and spacer means [for] maintaining the bundled processing membrane elements in laterally spaced relation to each other throughout within the sealed chamber through which the contaminated-laden fluid is conducted for filtration by the processing membrane elements from which the filtered fluid is laterally withdrawn into the module as a cleansed portion of the contaminate-laden fluid.

Kindly add the following claim:

9. A module housing within which a contaminate-laden fluid undergoes filtration into a cleansed portion thereof by filtration through membrane elements, the improvement residing in: means positioning the membrane elements within the module housing in laterally spaced relation to each other throughout while extending between opposite axial ends thereof for conducting the contaminate-laden fluid through the module housing to initiate axial flow therethrough between said axial ends so as to thereby undergo said filtration into the cleansed portion; and drain means for withdrawing the cleansed portion after lateral passage through the membrane elements to effect said filtration without mixing while the contaminate-laden fluid is undergoing said axial flow through the module housing.